METHODS OF DEVELOPING AN INDEX OF COLLECTION CONDITIONS

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I

One of the most important problems which confronts the individual business enterprise is that of determining the status of its collections. In addition to determining the terms upon which it will sell, and checking the credit of the individuals and enterprises to which it sells, it must also take account of the degree of promptness with which payments are made to it by these trade debtors for the merchandise which they have purchased. In other words, it must consider the relation which actual collections bear to the terms upon which the goods are nominally sold. Not only, however, is the individual enterprise interested in its own experience, but it is interested as well in the general experience in its particular line of business and in its particular territory, while in addition it must consider, though perhaps somewhat less immediately, the general situation relative to collection conditions which prevails among business enterprises as a whole and in the country at large.

The latter problem, however, is of interest also to the student of general business conditions. It is well known that collections fluctuate with general business conditions. This variation may occur in one of several ways. To illustrate, let us consider as typical terms upon which merchandise is sold, 1 per cent 10 days, net 30 days; that is, a cash discount of 1 per cent is permitted for payment within 10 days from date to invoice, while in the event that the buyer does not elect to take the cash discount, the bill is due net at the close of 30 days after date of invoice. When funds are readily obtained by the purchaser, either through prompt payment made to him by those to whom he sells his merchandise or through borrowing direct from his bank, he will elect to take the cash discount. The discount in the illustration which we have taken will be roughly at the rate of 18 per cent per annum, while if he borrows, the cost of the funds to him in general will be merely 6 per cent per annum, or less in certain cases. In other words, when business conditions are "good," there in general will be a high percentage of accounts which take the cash discount. The reverse will be the case when "money" is tight and bank reserves decline and interest rates rise, so that funds either become more difficult to obtain, or borrowing to take the cash discount at least becomes

less profitable through a narrowing in the margin between the interest rate and the discount, while at the same time the purchaser's own collections are slower. In addition, at such times, the percentage of accounts which are not paid within the net period, but which instead run past due, will increase. In certain cases an extension of additional time may be requested, or a note running 30 days or longer may be tendered at the expiration of the original net period. Both of these forms will be found more frequently at such times. The relative extent to which each occurs will vary from industry to industry. Assuming an ordinary cash discount sufficiently large to be attractive where the bulk of the accounts sold are large well-rated firms, the regular percentage of accounts taking the cash discount will be large, and the change in general business conditions will be reflected principally in the decrease in the percentage of cash discounters. Where the reverse is the case, the change will be reflected chiefly in the percentage of past due accounts.

It will be observed that we have spoken of collections as fluctuating with general business conditions, according as the latter are "good" or "bad." Applying the modern theory of the business cycle, it would appear, however, that the change in conditions would already become apparent toward the close of the period of prosperity, as a "credit pinch" developed. But the exact relation of collections to the course of the business cycle is extremely difficult to ascertain. The chief obstacle lies in the difficulty of obtaining definite statistical data relative to collections. This in large part is due to the fact that no standard device exists for measuring collections, and various methods are thus employed at the present time. The methods in fact vary to some extent from industry to industry and are largely devised to meet the credit conditions peculiar to the industry in question. The statistical problem is chiefly one of the unit to be employed. What shall be taken to show the status of collections? All other aspects of the question are subordinate to this. It will be evident from the previous paragraph that the task is by no means simple and that numerous difficulties arise. In particular, credit conditions and terms on which merchandise is sold are by no means homogeneous, but vary considerably from industry to industry. In addition to the difficulty experienced in developing an index for a given industry, there then exists a further difficulty in attempting to show the general status of collections throughout our industrial life as a whole. The simplest approach will be to consider the various methods by which the individual business house may attempt to measure the status of its collections, and to indicate the suitability of the several methods under

different types of terms on which merchandise is sold. To these methods we shall now direct our attention.

II

An ideal method of measuring the status of collections would appear to be through the use of an absolute collection percentage. Assuming that a month be the period of time chosen, there would be calculated each month *the percentage which the amount actually collected is of the amount which should have been collected.* Perfect collections would be indicated by 100 per cent and the actual percentages shown would range between the limits of 0 and 100. The use of this plan would involve ascertainment of a method of calculating both the numerator and denominator of the fraction employed to compute the percentage. Serious difficulties arise in connection with the denominator. Exactly what is the "amount which should have been collected?" It might appear that the test would lie in payment of accounts according to terms. But where a cash discount system prevails, if, to take the two extreme cases, on the one hand, all accounts are discounted, or on the other hand, all accounts are paid only at the expiration of the net period, payment in both cases is made according to terms. Yet in the second case collections are decidedly slower, and in industries in which in general a high percentage of accounts is discounted, the slowing up of collections will be found largely in this form. To take cognizance of this fact, it would be necessary to employ an approximation, shortening the average time represented by the net terms to take account of the customary proportion of accounts discounted. Payment of all accounts within that period would then be represented by 100 per cent.

One point stands out in this discussion. We have considered merely the proportion of accounts paid within a given period. Instead, we must take cognizance also of the time which is actually taken for payment. Not only is this the case for accounts paid at or prior to the expiration of the net period, but the time taken for the payment of delinquent accounts is also of significance, yet we have not considered it at all in the above discussion.

A second ideal method, supplementary, however, to the first, would then appear of calculating an absolute collection percentage. There would be calculated each month the *percentage which the average actual number of days in which accounts were paid was of the average actual number of days time on which the goods were originally sold.* In this case the denominator would again cause difficulty. Approximation alone would be possible, the average time represented by the net terms

being shortened in the manner indicated above. To employ a specific illustration, assuming that the average length of terms computed in the manner just indicated was 20.086 days, the fraction employed in obtaining the collection percentage might read as follows:

$$\frac{250{,}000\times 10+200{,}000\times 15+500{,}000\times 30+50{,}000\times 40}{1{,}000{,}000\times 20.086}.$$

Assuming that the methodology was thus determined, it would be possible to calculate these percentages. To do so, however, would entail considerable additional expense and labor, as it would be necessary to trace each individual sale and to keep specific records for this purpose alone. Let us, therefore, examine the data which are contained in the records of the individual enterprise relating to its ordinary operations. Fundamentally, the data available represent (1) collections during the period, (2) outstandings, that is, accounts receivable on the books, at the opening and close of the period; and (3) sales during the period. But each of these in fact must be further resolved into several constituent elements. Collections are of four kinds: (1) amounts paid by those taking the cash discount, either within or without the cash discount period; (2) amounts paid prior to the expiration of the net period, that is, "anticipations" of the latter; (3) amounts paid at the expiration of the net period, and (4) amounts paid after the close of the original net period. Outstandings are either (1) current, that is, not yet due, or (2) past due. A further classification of these according to month when due and age, respectively, would appear desirable. If outstandings and collections be compared, the situation for a given month, such as September, would be as follows:

Outstandings on September 1	Collections during September
Past due	Collections against old past due accounts
Current, due net in September	Collections of current items at close of net Collections of current items after close of net Anticipations of current items
Due net in October, etc.	Discounts and anticipations of accounts due net in October and subsequent months Discounts and anticipations of accounts representing September sales

Where sales are employed as the norm, it would be necessary to consider the length of the net terms, and in particular to eliminate accounts bearing a season dating. A cruder measure in general would appear to be afforded than by the use of outstandings.

In fact, it would appear possible to obtain a substantially accurate percentage only where proximo or e.o.m. terms are employed, and for all the accounts, not merely for active accounts. In such cases all sales made during a given month, and shipped prior say to the 25th, are due (or subject to discount) on a specified date of the following month, most frequently the 10th. The outstandings at the close of the month, which are due on the 10th, afford an indication of the amount which should be received. Where, however, a large proportion of the accounts are paid only at the expiration of the net period, the figure will show merely the percentage of accounts taking the discount, and were it desired to supplement it, adjustment would be necessary, in which case the problems arising are similar to those indicated above. On the other hand, in industries in which the great majority of accounts will be paid by the 10th proximo, the method is of considerable value. It in fact is employed by the larger rubber companies in following the status of their collections from month to month, in particular for tires. In the latter industry terms in general are 5 per cent 10th proximo, 75 to 85 per cent of accounts of leading manufacturers are discounted, and a period within which accounts are due net is frequently not specified. Eliminating for ordinary months accounts which bear the spring dating, the outstandings at the close of the month may be taken as a norm. For comparison herewith, there is taken either the amount of these outstandings which have not been paid by a later date, such as the 15th or 30th, 5 and 20 days "grace" respectively being allowed in these methods, or there may be taken the collections which are made up to this later date. It is customary also to analyze further the outstandings at the close of the month. Separation is made according to age, those which are current, 30 days old, 60 days old, and 90 days old and over generally being distinguished. In many cases, of course, other classes of rubber goods are handled, and these often are not separated, what is termed by one company "a collectible" trial balance, for example, being figured in order to show the accounts on which they are actively working during the next 30-day period. Collections in the industry are largely made by credit managers at the branch houses, who each month report the data outlined above, as well as the condition of selected individual accounts, to the principal office which in this manner keeps informed as to the collection situation. Due to the peculiar terms employed in the industry, it is thus possible to follow the status of collections with substantial accuracy.

A possible application of this method is suggested in the case of highly seasonal industries in which season datings, affording annual

or semi-annual settlement dates, are found. Men's clothing to some extent falls in this category, also manufacturing of fur. A similar situation prevails in the case of the agricultural sections, such as, for example, the Northwest, where October 1 is the "big pay day." A valuable indication would be afforded in such industries and sections by a consideration merely of the proportion of the amounts due at that time which was paid, no definite data for other periods of the year being obtained.

III

In industries in which proximo terms are either employed to a limited extent only or not at all, the ideal methods outlined above serve merely as guides and other more arbitrary and at the same time cruder methods are necessary. These in general are of two kinds. On the one hand, effort is made to arrive at what is a rough approximation to the denominator in the fraction considered above, and with the basis of expectancy thus obtained, there is compared a numerator representing collections made. As will be indicated presently, both numerator and denominator may be calculated in several ways. By this means, an expression is obtained for the flow of payments in relation to volume of business done. The second method consists of a *division of outstandings on a given date into current* (*that is, not yet due*) *and overdue.* In general the latter item is used in this manner only in the construction of an index, and is not compared with other items. It is not usually analyzed further by business houses according to age or length of time overdue, although a period of grace may be provided, accounts 30 days or more overdue, for example, merely being considered. The amount of accounts overdue is then expressed as a percentage of total outstandings on the given date. This method is frequently employed to supplement an index of the first mentioned description. Although of a simple nature, it may be very expressive. The decided decline in collections which many manufacturers of men's clothing have experienced this year is well illustrated by figures of the above description prepared by a leading manufacturer, which show that 82 per cent of his outstandings on June 30 were more than 30 days old, as against only 23 per cent on April 1. An interesting variation of the method is employed by another leading manufacturer who divides total outstandings at the close of the month into those originating (a) in the season previous to that just passed, (b) in the season just passed, and (c) in the present season. The percentage which each is of the total outstandings on that date is then calculated. Seasons, of course, change every six months.

There is, however, a danger that, used by itself, this method may serve rather as a record of past events, which are clearly perceived when passed in review, than as an effective record of the present situation and one which promptly calls the attention of the observer to the changes which are occurring at the time. But this may probably be held also in greater or lesser degree against any single index which may be constructed. It, however, points the way to the first test that any index which is developed must face. The index must give a prompt and a fairly accurate reflection of the collection situation, meaning by the latter requirement merely that the change which occurs in the index shall vary roughly in magnitude with the actual change which occurs in the collection situation. This requisite may be summed up rather roughly in the term "sensitiveness." But this test implies also that, second, the index include a proper basis of comparison or expectancy, and that this basis be not susceptible to purely extraneous influences, such as an increased volume of business which does not immediately affect the actual collection situation. Assuming that these general criteria are satisfied, the index chosen must be adapted to the credit conditions prevailing in the industry in question, in particular the terms of sale and the percentage of accounts which are discounted instead of being paid only at the expiration of the net period. Considered alone, the analysis of outstandings on a given date is of value rather in industries in which the greater proportion of accounts are not discounted, or in which net terms exclusively prevail. In industries in which the reverse is the case, the method serves instead basically as a supplementary device to take cognizance of the situation with respect to the accounts which are not discounted.

In industries of this description, an index of the first type is desirable. Several methods exist of constructing this type of index, and they consist largely of varying combinations of the several items enumerated above as supplying the working tools in actual practice, namely, sales, collections, and outstandings. Neglecting minor variations, either sales or outstandings may be taken as the basis of expectancy. With the item chosen, the collections made are then compared, or, where sales are employed, the same result may be indirectly obtained through the use of the outstandings at some later date. Let us consider at somewhat greater length typical examples of each of these two forms.

(1) *Calculation of the Percentage Which Outstandings on the First of the Month Are of the Previous Month's Sales.* The percentage may be stated, for example, either as of July 1, or for June, and both forms are in use. It is the recognized method employed by wholesale groc-

ers. About twelve state or territorial associations regularly obtain such reports each month from part of their membership, and their preparation reflects the widespread interest in the industry during the last few years in closer collections. Collection of all accounts within 30 days would be represented by a percentage of 100. As it would appear that on the whole approximately half the accounts of wholesale grocers are discounted, a shortening of the time would seem to be called for, but against this may be roughly set off active accounts on which proximo terms are granted, and the figure of 30 days may thus be retained. The percentage obtained may easily be converted into a figure representing the number of days' business outstanding, or, as sometimes phrased, the number of days in which accounts are collected. The latter figures, however, are employed comparatively seldom as compared with the percentage of outstandings. Another variation that has been employed by one wholesale grocers' association is the comparison with sales during a given month of collections during that month, instead of outstandings on the first of the following month. With this method, direct instead of indirect measurement of the flow of collections or rapidity of credit turnover is made. It may be noted that where longer terms are in use, sales during a previous month may be employed in order to give an approximate basis of expectancy, or else the amount of charges (representing shipments) may be employed. In such cases, moreover, collections rather than outstandings in general will be employed for purposes of comparison, and the method is in fact employed by a number of shoe wholesalers.

Prevailing wholesale grocery terms on the general line (excluding special items billed separately) are 1 per cent 10 days, net 30 days, one month's sales being due net during the following month, although proximo terms are also frequent on active accounts. The method is thus better adapted to that industry than to one in which longer terms prevail. Outstandings, aside from old overdue accounts, consist merely of amounts due net during the month, and do not represent a heterogeneous mass due net in any one of several months to come. But sales do not in all cases provide a fair basis of expectancy. This is particularly noticeable at seasons of the year when retailers purchase heavily, the percentages decreasing in consequence of the increase in the denominator. Moreover, in contrast to the situation which prevails where outstandings on a given date merely are analyzed over a period of time, the percentages of outstandings shown are affected by a shortening of terms, and this influence, as well as closer collections, has been present in the general decrease during the past few years in the percentages shown by wholesale grocers. But on the other hand

this shortening of terms merely reflects the changes in progress in general business conditions.

One further question arises in connection with the construction of an index of this description. While in general no specific definition of the terms "sales" and "outstandings" is given, in the case of one association total outstandings are requested, no matter how represented, whether by note, or secured by mortgage, or otherwise. This raises the problem of the extent to which the percentage should be raised by including old past due accounts which such settlements will represent, and how far it should be kept "fresh" to depict the current situation. The question of the legitimacy of including cash sales has also been raised, inasmuch as such sales may largely represent intergrocer transactions, and thus do not enter into a true reflection of collections made by wholesale grocers of retailers' accounts with them.

(2) *Calculation of the Percentage of Collections During the Month to Outstandings on the First of the Month.* This method appears to be in considerable use among wholesale dry goods houses. Inasmuch as the regular terms on the general line in the industry are 2 per cent 10 days, 60 days extra, with anticipation permitted at the rate of 6 per cent per annum, making the discount for cash 3 per cent 10 days, while certain items also bear special terms, the method possesses at once certain elements of both strength and weakness. On the one hand, collection figures for any given month must have a wider basis of expectancy than is afforded by any single month's sales, and from this point of view, outstandings are probably the most satisfactory type of date. But they are subject to the influence of a changed volume of business, and where the industry, in particular in the West, is decidedly seasonal, datings, in general April 1 and October 1 on the general line, have been customary. In fact, certain houses state specifically that no value is attached to month to month comparisons, but that comparison alone is made with the same month of the previous year. Over a period of time, this type of index shows the influence of change in terms, but, as remarked above, this change in terms itself reflects the change in business conditions. Variation of the method is reported by one wholesale drygoods house, which adds to outstandings on the first of the month, both due and past due, the collections during the month, in order to obtain the basis of expectancy, and then compares collections therewith. Another house instead adds the charges during the month to the outstandings on the first of the month and compares the collections with this sum. In both cases, the thought is to include a basis of expectancy for that part of the present month's sales which is discounted and which would not be included in the outstandings on the first of the month.

The general method of comparing collections with outstandings is also employed to some extent by manufacturers of men's clothing. This line, however, is of a decidedly seasonal nature, season settlement terms, in general June and December, still largely prevailing, although within the last few years a number of houses have shortened terms or eliminated datings. The device then will be of value rather as the monthly changes in outstandings are considered in relation to the monthly changes in amounts collected, due allowance being made for season settlement dates, and the course of both items is compared with previous years. In so doing we abandon the plan of construction of a specific index, and consider instead changes in the actual items themselves. It will be observed that in the general method of comparing outstandings and collections, we in fact depart in considerable measure from the conception of finding an absolute basis of expectancy and adopt instead the thought of the relation of the flow of payments to non-payments.

There is also a further variation of this general method. The same principle may be applied as in the case where outstandings are analyzed into those which are current and those which are past due. In the present case, collections during the month may be compared with the outstandings at the close of the month, the sum of the two in fact affording a rough basis of expectancy.

In seasonal industries, cumulative percentages are frequently calculated for the current season, either in place of or supplementary to the monthly percentages. Sales and collections are most frequently employed, although the average of the outstandings at the close of each month to date may also be used in place of sales.

IV

In the construction of an index in this manner for a given industry, it is necessary for a central agency to obtain data from the individual houses and to combine the individual returns and prepare composite figures. Where returns are made in percentage form by the individual house, a method of weighting should be employed in order to assign approximately the proper degree of importance to the figure from each house. But this in fact is not done by any of the state and territorial wholesale grocers' associations, which are perhaps the most prominent organizations preparing such reports at the present time. In addition, the number and identity of the reporting firms varies somewhat from month to month. Additional importance is to be ascribed to lack of weighting because of the fact that the figures of the individual houses vary greatly, the extreme high and low percentages in

the California report (covering 29 houses) for August 1, 1920, e. g., being 63.0 and 135.0, and the average for the state 100.2 per cent. The figures of each individual house are generally shown (though no names are given) and in certain cases figures of the same house for two months are placed opposite each other for purpose of comparison. At the bottom of the sheet is given the unweighted average calculated from the actual returns given above. Inasmuch as the operations of wholesale grocers frequently cover only a relative restricted territory, no question arises of the separation of accounts according to the territory in which located. In other industries, however, in which the business is perhaps even of a nation-wide character, separation of accounts according to territory is manifestly desirable. But in many cases business houses are unable to make the separation as the ledgers are kept alphabetically, or else the names of the states are arranged alphabetically. This is the case with some of the largest firms in the country at the present time, conspicuous examples which the writer recalls being a leading shoe manufacturer and a leading textile commission house.

The problem next arises of interpreting such data. This is complicated by the fact that in many industries, as already remarked above, such as wholesaling of groceries, a strongly marked secular trend is shown during recent years as the result of the existence of a sellers' market. Reports of wholesale grocers have had as one of their primary purposes to afford an indication of the extent to which closer collections were being made and terms were being shortened.* Moreover, the actual percentages on the whole show a marked seasonal change, more noticeable again since the close of the war, during which the tendency was somewhat submerged, and allowance must be made for this. In addition, choice of the base period is necessary. The problems in this connection, however, are substantially similar to those presented by any indices of business conditions and need not be considered here.

So much for the construction of an index for a given industry. For an understanding of general business conditions, the problem next arises of selection of industries which will either best anticipate (as has been claimed for certain wholesale price index numbers) or best depict conditions. In the construction of an index of general collection conditions, the method of sampling must be employed and certain industries alone considered, whether the final index consists merely of a series of indices reflecting conditions in each of the several industries, or whether these several indices be combined into one composite num-

*Reference may be made to the addresses and articles of Mr. F. C. Letts, President of the Western Grocer Company, Chicago.

ber. In short, the problem which confronts us is as to which industries are most sensitive or most representative. This involves selection from among the several stages of the economic process, as well as selection from among the various classes of commodities. On the one hand, it would appear that enterprises selling the retailer would first experience a decline in collections, rather than enterprises selling the wholesaler, while on the other hand it would appear that collections in lines handling luxuries rather than necessities would likewise first show a decline. An added consideration would of course be the average size of the purchasing firm, which is partly covered in the division of the economic process into stages. Finally, terms in the industry should be fairly standardized, although they of course should not be extremely short, such as two weeks or less. Although certain guiding principles may be laid down, the question cannot be decided *à priori*, but requires instead an empirical approach. Only when data are available for various industries will it be possible to make a firmly grounded decision.

V

We have considered thus far construction of an index of collection conditions through special reports relative to collections furnished periodically by business houses to a central agency which compiles the composite figures, but the problem may be approached in another manner. The principal type of credit exchange bureau has as its function the furnishing of reports on the credit standing of accounts which the subscribers or members sell. Upon inquiry by one subscriber, a request for data is sent to the other subscribers, who then give their experience (if any) with the account concerning which inquiry is made. In other words, there is mutual exchange of experiences with the particular account. A variation of this method of operation consists in having the bureau itself "check" the credit of the would-be purchaser. It then keeps the data in its own office and merely advises the subscriber of its conclusions, stating that it would or would not ship the goods. The form employed by the bureau in obtaining information in general among other things calls for (1) the amount owing by the customer to the member, both not yet due and overdue, and (2) the recent payment experience with the customer, whether prompt or slow. These items in fact provide the nucleus for an index of collection conditions. Especially will this be so where data in addition are obtained showing the amount on order by the account, but as yet undelivered. This item gives an indication of merchandising activity in the industry, while the other two items reflect the collection situation. These three items can then be compiled regularly by the credit

exchange bureau from the responses to subscribers' inquiries, and a reflection thus obtained of the collection situation in the field which the bureau embraces.

A considerable number of bureaus of the purely credit exchange type as contrasted with the checking type are in existence today. Some are purely local, operating either among several trades in a given city, or in a large center, within one trade only, while other bureaus operate within a given industry. Certain of the latter are affiliated with trade associations in these industries. Bureaus operating on a national scale, however, are extremely rare. The National Association of Credit Men has developed plans for a bureau on a national scale, which it will institute on January 1, 1921. In 1916 the statement was made by a leading authority that only one such bureau existed, namely, the Credit Clearing House.* This bureau in its *Credit Barometer* covers mainly the apparel and textile lines. The *Barometer* in its weekly and monthly forms is stated to embrace respectively over 50,000 and over 200,000 transactions. Monthly comparisons giving percentage of increase or decrease for the country as a whole and for six sections are made with the previous month, and with the same month during previous years, while weekly comparisons, giving percentage of increase or decrease, are made with last week and the same week last year and two years ago. No definite and continuous series, however, is shown, the nearest approach consisting of a graph depicting the situation for each of the three items for the country as a whole by months since January, 1916, but no scale is attached.

In constructing the barometer, the experiences obtained on each subject of inquiry are added. The three items indicated above are taken, namely, unfilled orders (called "purchase activities"), amount owing, both not yet due and overdue (called "indebtedness") and payment experience, whether prompt or slow (called "payment activities"). It may have appeared above that dollar amounts shown in subscriber's returns would be added. The Credit Clearing House, however, employs the number rather than the volume, and constructs its barometer by dividing the total number of accounts successively into the number of purchases reported, the number of accounts owing, and the number reporting payment experience as prompt. The number of reports varies somewhat from month to month.

In response to an inquiry, it was stated in July, 1919, that

"The number of firms reporting is not always the same, but it is always large enough so that the law of average brings the percentage to a point where we believe it shows the condition, and we have no standard unit at which we stop.

*Ettinger and Golieb, *Credits and Collections*. Second Edition. New York, 1917, p. 137. A description of its operations is given on pp. 137–141.

"The variation from month to month is small. Some months, in the lighter inquiry season or the season when purchases are not being made so heavily, there may be 2,000 or 3,000 experiences less than in months where the buying and inquiring is the heaviest, but this amount, where the experiences are upward of one hundred thousand, cannot play any part in the general percentage average.

"The total number has not increased to any extent since January 1916 except in purchases."

This statement was recently confirmed in conversation with the writer. In connection with an index of this description, the same problems of interpretation of course arise as were indicated above.

It will be observed that in the construction of this type of index data are obtained from individual houses in the ordinary course of business activity. By making the individual purchaser instead of the individual seller the unit about which information is obtained, no additional burden is involved in gathering the information. It is the same with a modification of the method which has been suggested, namely, to obtain from collection agencies data showing the number and volume of accounts placed in their hands for collection. Inasmuch as accounts would not be so treated until the seller had given up hope of himself collecting the account, a reflection would be afforded of the relative volume of absolutely bad accounts. The Credit Clearing House, which also operates a collection service, has recently commenced the compilation of data of this kind, as per the following figures:

1920	*Number*	*Average Size*
June	8,813	$163
July	9,238	172
August	9,964	161

VI

In conclusion the leading points mentioned in the foregoing may be brought together:

1. Two principal methods exist by which an index of collection conditions may be constructed:

(a) Through special reports relative to collections obtained from individual houses by a central agency which prepares composite figures.

(b) Through compilation by a credit exchange bureau of information regularly obtained in the course of its ordinary operations, relative to the credit standing of individual buyers.

2. Great difficulty is experienced in defining the statistical unit to be employed in measuring the status of collections, inasmuch as credit conditions, in particular terms of sale, vary greatly from industry to

industry. These differences are reflected in the methods now employed by individual business houses in following the status of their own collections.

3. Where the problem is approached in the first manner, indicated under (a) above, it would appear best to adapt the method employed to the methods now in use by the individual business house in that industry, varying the method from industry to industry in accordance with the credit conditions peculiar to each. In industries where no relatively standard method is employed, adaptation of the methodology to the records of business houses and to the credit conditions in the industry would be necessary. We thus gain in the more perfect reflection by the index of the collection situation in the given industry, but on the other hand lose in that our data, due to differences in methods of constructing the index in different industries, lack comparability as between these industries.

4. Only one instance has been noted of the construction of an index in the second manner, mentioned above under (b). Reports obtained in this manner, of course, are limited to the credit information given on the blank employed, as use must be made of these items. The principal problems which then arise in its construction relate to the choice of a number of accounts versus quantities in dollars, the construction of a strictly continuous series employing the same firms each month, the selection of the industries to be included, and the method of presenting the index, whether, as in the illustration mentioned above, past due accounts each month be shown as a percentage of total accounts that month, etc. The problems in this connection do not differ greatly from those experienced in the construction of the other type of index with the exception that the field of choice is much narrower, due to the small variety of items with which to work.

5. It would appear that advantageous use might be made of the credit interchange bureau in certain industries. In many, however, it would be necessary to obtain special reports from individual houses relative to the status of collections. More important than the question of choice between these two methods of approach is the actual gathering of data showing the collection situation in order that through careful analysis of the same, conclusions may be reached on the various issues indicated above and the way be paved for an accurate and scientific index of collection conditions.